

Citrus Canker Information
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Citrus Canker has been found in Marathon. This article is from the **2004 Florida Citrus Pest Management Guide: Citrus Canker** by P.D. Roberts, et al, and provides a better understanding of what Citrus Canker is and how it has spread in Florida.

Citrus canker, caused by the bacterium *Xanthomonas axonopodis* pv. *citri*, is a leaf, fruit and stem spotting disease that affects numerous species, cultivars, and hybrids of citrus and citrus relatives. Grapefruit and Mexican lime are highly susceptible to canker, Navel, Pineapple and Hamlin sweet oranges, lemons and limes are moderately susceptible, Valencia orange, tangors, tangelos, and other mandarin hybrids are susceptible, and mandarins are moderately resistant. Young lesions are raised on both surfaces of the leaf, but particularly on the lower leaf surface. The pustules later become corky and crater-like with a raised margin, sunken center and are surrounded by a yellow halo. Fruit lesions vary in size because the rind is susceptible for a longer time, and more than one infection cycle can occur on the fruit. Stem lesions can support long-term survival of the bacterium.

Major outbreaks of citrus canker occur when new shoots are emerging or when fruit are in the early stages of development. Frequent rainfall in warm weather, especially during storms, contributes to disease development. Citrus canker is mostly a leaf-spotting and fruit rind-blemishing disease, but when conditions are highly favorable for infection, it causes defoliation, shoot die-back, and fruit drop. When feeding galleries of Asian leafminer on leaves, stems, and fruit become contaminated with the bacterium, the number and size of individual lesions greatly increases and results in tremendous inoculum production.

The bacterium reproduces in lesions on leaves, stems, and fruit. When there is free moisture on the lesions, the bacteria ooze out and can be dispersed to new growth and other plants. Wind-driven rain is the main dispersal agent, and wind speeds greater than 18 mph aid in the penetration of bacteria through the stomatal pores or wounds made by thorns, insects and blowing sand. Leaves, stems, and fruit become resistant to infection as they mature. Almost all infections occur on leaves and stems within the first 6 weeks after initiation of growth. The most critical period for fruit infection is during the first 90 days after petal fall. Infection after this time results in the formation of only small and inconspicuous pustules.

Most spread of canker bacteria by wind and rain is for short distances, i.e., within trees or to neighboring trees. Canker is more severe on the side of the tree exposed to wind-driven rain. Spread over longer distances, up to miles, can occur during severe tropical storms, hurricanes, and tornadoes. Long-distance spread more commonly occurs with the movement of diseased plant material, such as budwood, rootstock seedlings, or budded trees, or less commonly on fruit and leaves. Workers can carry bacteria from one location to another on hands, clothes, and equipment.

Eradication of infested and exposed trees is the most effective means of protecting commercial citrus from the disease. A regulatory program is currently operated to eradicate citrus canker bacterium in Florida. Decontamination/disinfestation procedures are crucial to reduce the risk of further dissemination of the pathogen and increase the probability of eradication of the disease in Florida.

The Department of Agriculture and Consumer Services oversees the Citrus Canker Eradication Program. If you have any questions regarding inspectors in your area, please call the **Citrus Canker Helpline at (800) 850-3781 and the Internet Web site <http://doacs.state.fl.us/canker>**